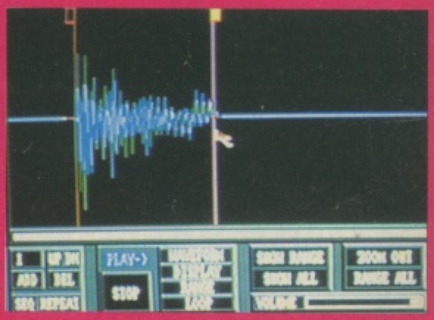
FREE SUPPLEMENT

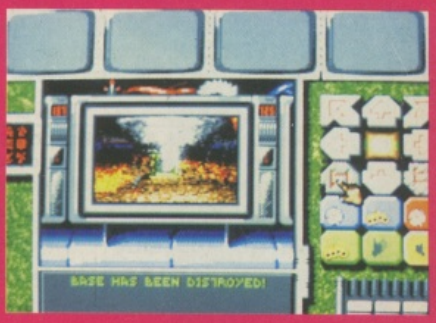
CU

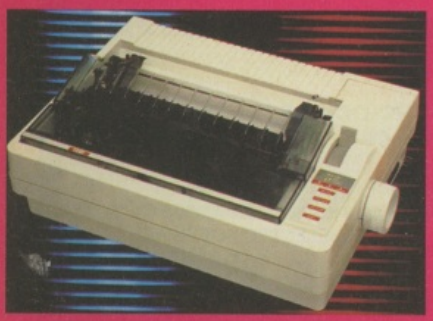
# AMIGA

## HERE IT IS –
# THE COMPLETE GUIDE TO YOUR AMIGA



## INDISPENSABLE HINTS 'N' TIPS FOR ALL NEW OWNERS



WHAT TO DO IN AN EMERGENCY • YOUR PRINTER PROBLEMS SOLVED • HOW TO GET THE BEST FROM YOUR AMIGA • WORKBENCH 2.0 – WHERE TO BEGIN • GAMES – WHAT TO BUY AND WHERE TO BUY THEM • BEGIN TO LEARN PROGRAMMING

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# THE COMPLETE GUIDE TO YOUR AMIGA

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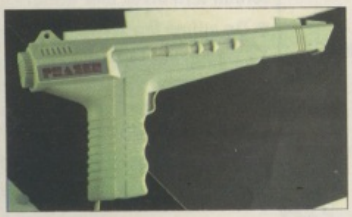

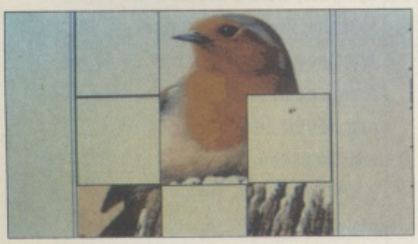

**EVERY MONTH...** CU Amiga takes a look at all the new games, hardware devices and productivity packages in an entertaining, authoritative and comprehensive manner. We guide you through each package and tell you how to use it in easy-to-follow guides. CU Amiga is like two magazines for the price of one. Reserve a copy at your local newsagent or turn to page 48 of the main magazine to find out more about our amazing subscription offer. Don't delay if you want to get the best out of your Amiga!

**Welcome to CU Amiga's third free supplement. This one's for all of the 80,000 people who've just had the good sense and taste to become owners of the best home computer around. Inside you'll find vital information, ranging from what to do if your keyboard doesn't work to choosing the right game. Read and enjoy. . .**


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# IN A FIX?

**Printer won't output, monitor on the blink, joystick won't respond? Don't worry, for here is your guide to a problem-free life...**

## PRINTER PROBLEMS

● This may sound obvious but having an unconnected printer is a common mistake. Check over the wires that run from your Amiga to the printer and the plug. Don't forget to switch off your computer and switch off at the mains if do have to reconnect the leads.

● Having problems with you printer driver? Copy across the correct driver to the Workbench disk, and then select it from Preferences.

● If you're print-outs are of poor or inconsistent quality, the first thing to check is that the ribbon's still on the printer head.

● Daisy wheel printers *can* print graphics as well as text, but it's a massively intricate process. Exchange your printer if you take art seriously.

## POOR PICTURE

● Remember to set the TV to the correct channel.

● If your screen goes red or green this may be because the monitor lead is loose, or because the modulator switch is in the wrong position.

● A shaky picture often means that the Amiga is working in interlace mode. This simply means that it's trying to get more on screen. This can be corrected with a device called a flicker fixer.

## WON'T LOAD

● The causes can be many, ranging from software failure, a virus, to problems with the drive. Check through everything, reset and start again. If it still doesn't work, send the disk back. Oh, and by the way, always virus check your disks (it's worth spending a few quid on a decent program – most Public Domain houses stock them).

## DOESN'T SOUND RIGHT

● Make sure the adaptor lead is plugged in correctly if you use a TV, and make sure that the TV is set to the right channel.

● The SCART lead may not be plugged in properly if you're using a monitor.

## DOS AND DON'TS...

● **Don't plug the audio lead to the wrong output, if you use a modulator**

● **Don't take a disk out of the drive while the drive light is on.**

● **Do learn to do what's known as a 'soft reset'. Simultaneously pressing the two Amiga keys, the two shift keys and the control key will bring you back to the Workbench screen.**

● **Do ensure that nothing is plugged in when you switch on the power.**

● **Don't forget to wire the plug correctly.**

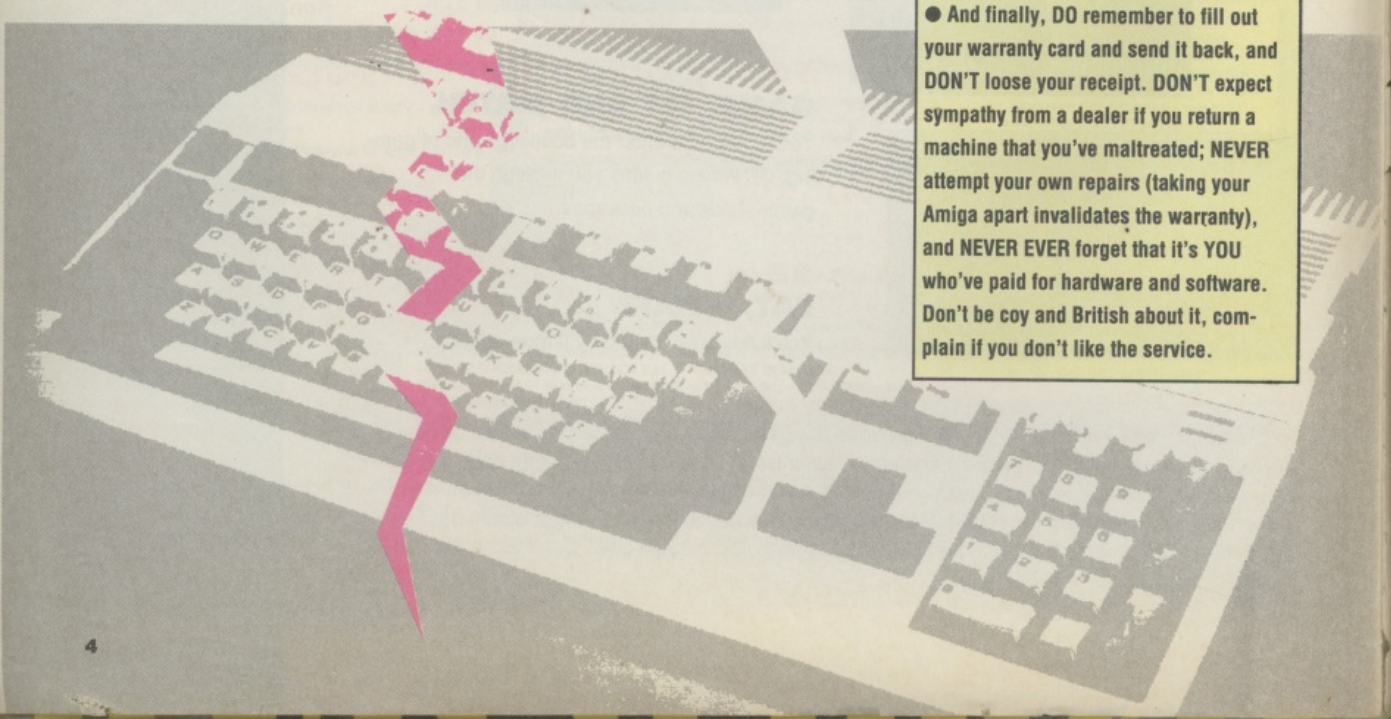
● **Do remember to set the DIP switches and use the correct driver when printing.**

● **Do read the instruction manual that comes with your monitor. Set the CVBS switch so that it's on RGB.**

● **Don't have the modulator plugged in when you turn on the TV. It will make the screen turn black and white.**

● **Do adjust the screw at the back of the modulator, if you're having problems getting sound.**

● **And finally, DO remember to fill out your warranty card and send it back, and DON'T loose your receipt. DON'T expect sympathy from a dealer if you return a machine that you've maltreated; NEVER attempt your own repairs (taking your Amiga apart invalidates the warranty), and NEVER EVER forget that it's YOU who've paid for hardware and software. Don't be coy and British about it, complain if you don't like the service.**



**Each month CU Amiga offers its readers unparalleled advice, hints and tips on hardware add-ons, programming, sound, graphics, productivity software, as well as the best games coverage in the industry. Be it via our Questions and Answers service, in a review, or in an in-depth tutorial, you'll always find something that makes computing a more fascinating – and approachable– hobby.**

**There are a limited number of back issues available – so if you want to catch up with the rest just ring our Back Issues Teleservice on 0858 410510.**

**JUNE ISSUE**
DPaint 4, CLI, tricks with type, print your own T-shirt, printers head-to-head, virus-killing hardware; Intersound, Interword and Interspread.

Games: Beast Busters, R-Type2, Search for the King, Cohort, Metal Mutant, Navy Seals, Das Boot, Trial By Fire, MegaTraveller, Warzone. Tips: Eye of the Beholder, Bard's Tale 3.

Disk one: Gravity (full-price game from Mirrorsoft). Disk two: Warzone playable demo, Caverunner (game); Protracker sequencing package, utility boot installer, poster fonts, CLI utilities.

PLUS FREE 24-page supplement: How to do-it-all on the Amiga

**JULY ISSUE**
Audio special, TFMX2, Vista Pro landscape generator, How it Works – Disks; Gravis Mousestick, digitisers head-to-head, education round-up, colour cycling explained.

Games: Pro Flight, PP Hammer, RBI Baseball 2, Life and Death, Frenetic, Prehistorik, Manchester United, Germ crazy, Hero's Quest, Crime Does Not Pay, Champions of the Raj. Tips: MegaTraveller, Hill Street Blues.

Disk one: Zombi (full-price game from Ubisoft), Manchester United demo, the best of Technosound.

Disk two: Technosound Turbo, PP Hammer playable demo, Brush 4D, House inventory program, colour sycling slideshow, chip checker.

**AUGUST I** SOLD OUT
Get rich q… with your Amiga, create your own logos, scanners head-to-head, Workbench Management System, Video One, Protracker 2.

Games: Thunderhawk, Cardinal of the Kremlin, Battlechess 2, Sliders, Swap, King's Quest 5, Elf, Moonbase, Armalyte, Lords of Chaos, Thunderjaws, Bill and Ted's Excellent Adventure, Hunter, Maupiti Island, Wild Wheels. Tips: Gods, Hero Quest.

Disk: Armalyte (playable demo), MM, Ping Pong, Star Trek Trivia (games), head cleaner, virus X, Tune of the Month, Screen of the Month, PPMore, PP Anim, Show Image, Formatter, Calckey, Fixdisk, Memclear, Keymacro, Amos Music Cycler, 48-point font.

**SEPTEMBER** SOLD OUT
How to che… …mation, word processors head-to-head, beginner's guide to DPaint 4, Comms round-up, sampling explained, Genius Graphics Tablet, Fujitsi DL900.

Games: Utopia, Robin Hood, Rodland, Jimmy White's Snooker, Magic Pockets, The Simpsons, Nebulus 2, Alien Storm, Cruise for a Corpse, Head over Heels, Blade Warrior, Final Fight, Executioner, Gaunlet 3, Mega Lo Mania. Tips: Eye of the Beholder, Life and Death.

Disk: Amos 3D demo, Trix, Dad and Gravity Wars (games), Bartman animation, Bootblock Champion 3.2.1, Tune of the Month, Pointer animator, Kill Da Virus 3.

**OCTOBER ISSUE**
How to shade pictures, design your own hardware, samplers head-to-head, joystick round-up, computer graphology, successful DTP, Gajit's Sequencer, education round-up.

Games: Lotus 2, Midwinter 2, Lord of the Rings, Rolling Ronny, Flight of the Intruder, Silent Service 2, Alien Breed, Death Knights of Krynn, Last Ninja 3, Amnios, Barbarian 2, Moonstone, Sarakon, Monopoly. Tips: Mega Lo Mania and bumper tips round-up.

Disk one: RSI Demo Maker (complete program), Moonstone (playable demo), Superecho Audio Digitiser, Timeset utility.

Disk two: Lotus 2 (playable demo), Trippen amd Power Pong (games), Tune of the Month, Screen of the Month, Canon BJ10e printer driver.

**FREE SUPPLEMENT! 24**-page Essential Guide to Public Domain

**NOVEMBER ISSUE**
Games construction kit round-up, fine art on the Amiga, genlocks head-to-head, 24-bit colour, Amos 3D, Joystick testing, How-it-works – Lightguns, MED tutorial, Virus Guide.

Games: Heimdall, Terminator 2, Leander, Supaplex, Altered Destiny, Robocod, Grand Prix, Hudson Hawk, Boston Bomb Club, Pit Fighter, The Blues Brothers, Stratego, Monster Business. Tips: King's Quest V, Flight of the Intruder.

Disk one: Fuzzball (platyable demo), H-Ball and China Challenge (games); tune of the month, DPaint slideshow, Nuclear war sim.

Disk two: Cubulous (game), DLock protection kit, anti-click device, screen of the month.

**DECEMBER ISSUE**
Graphics extravaganza: Animated movies, make your own Christmas cards, how to become a games designer; plus hard drives head-to-head, what works on Workbench 2?, sound enhancers, clip art round-up, typing class.

Games: Birds of Prey, Robocop 3, Ultima VI, Epic, Knights of the Sky, Battle Isle, Microprose Golf, Devious Design, Rugby: The World Cup Vs Audiogenic Rugby, 4D Boxing, First Samurai, Populous 2, Star Flight 2, Smash TV, Hagar the Horrible, Double Dragon 3, Super Space Invaders, Pegasus, Mega Twins, Suspicious Cargo, Fate, Seven Colours, Cisco Heat, Shadow Sorcerer, Super Fulcrum, Final Blow, Volfied, Hard Nova, Captain Planet.

Disk one: An instant collection of 21 games, all of which are guaranteed to work on the all-new Amiga 500P!!

Disk two: Text Plus 2.2E, A fully-featured word processor; Christmas Clip Art, vdeo and audio cassette label-making program; FastDisk 2 disk space organiser; picture of the month and tune of the month.

**Perhaps the most versatile micro ever made, the Commodore Amiga is supreme in all fields of personal computing. If you're tired of simply saving Lemmings, Rik Haynes suggests some of the other options available...**

# IT'S SIMPLY THE BEST

Welcome to the machine of opportunity. The possibilities of the Amiga really are limited only by your imagination. Within seconds you could be playing a game, creating stunning animated sequences or static art, composing some music, writing a letter, running a small business, producing your own fanzine... the list of options is almost endless. Everybody has the chance to get the best out of their Amiga. All that's needed to tap this huge potential for productivity and playtime is the right accessories. A little bit of practice can also help, of course! Luckily, hardware and software for the Amiga is readily available throughout the UK and the rest of the world. If you can be bothered, it's even possible to buy the latest gear in the bustling back-streets of Bangkok.

Over three million Amigas have been sold since the impressive introduction of this ground-breaking home computer back in 1985, when maverick artist Andy Warhol produced a portrait of sultry singer Debbie Harry on the Amiga using a prototype of EA's *DeluxePaint* art program at the Summer Consumer Electronics Show in Chicago. As the sales personnel were keen to stress at the time, 'Only the Amiga makes it possible'.

Surprising then, that the Amiga was originally intended to be the ultimate - video games console but a series of events quickly changed that perception. After legendary chip designer Jay Miner and the rest of the engineering group at Los Gatos in California had finished, the whole project had blossomed into the ultimate personal computer. They'd even devised one of the strangest peripherals yet seen. The Joyboard was a joystick operated in a similar fashion to going surfing or skateboarding.

## IMPROVED

Instead of sitting on its backside, Commodore has continually expanded and enhanced the Amiga family of microcomputers. Today, you have the choice of buying an entry level A500 with *Bart Simpson* game and *DeluxePaint* graphics package (£400), a more up-market version like the A1500 (£1000) or the new CDTV multimedia

machine (£500). This latter option fuses the flexible visual technologies of the Amiga with the outstanding sound and storage capabilities of Compact Disc.

The recent decision to supply the standard A500 with one megabyte of memory has been greeted with glee by the thousands of programmers out there in coding land. These dedicated digital developers are always trying to push the boundaries of what's possible on your favourite slab of silicon. Many future games and utilities simply won't work on an Amiga with less than one megabyte of RAM. Don't say you weren't warned!

Now it seems we could be seeing a slightly cut-down version of the Amiga, with an extremely attractive price of below £200, sometime next year. Where will it all end, eh?

## INVALUABLE

Once you've actually used an Amiga it's difficult to conceive of how you ever managed before the beast actually arrived. Little wonder then, that it's the darling of creative people on tight budgets. The resulting images and sounds, and sometimes the Amiga itself, can be seen in cheap movies and television shows including The Chart Show and Neighbours.

Possibly the most outlandish use of the Amiga so far has been by trendy DJs across Europe. Lasers effects are apparently no longer enough to satisfy the techno lusts of energetic nightclub ravers. Dancefloors, surrounded by expensive Sony monitors and fed by Amiga fractalvision, pump out visual noise in rhythm to the beat of hardcore grooves from the likes of The Prodigy, N-Joi and Bizarre Inc.

Most productivity applications and activities require a more meaty machine than the one sold in the Cartoon Classics bundle. The most likely upgrade route is taken by purchasing an extra floppy disk drive (approximately £50) or hard drive (around £250), decent monitor (from £300) and additional memory (around £50 per 512K of RAM). With such a system setup, you shouldn't have any problems waiting for your favourite program to strut its stuff. Commodore will shortly be launching an add-on CD-ROM drive (£TBA) allowing you to try CDTV product on your Amiga.

## MULTI-COLOURED DREAMBOAT

With a palette of over 4096 colours and multifarious display modes to have fun with, creating graphics is easily the most popular use for the Amiga. An incredible diversity of packages are available, ranging from ordinary paint and animation programs to sophisticated video titling software and genlock hardware enabling you to overlay text and graphics over your own home videos.

*DeluxePaint IV* by Electronic Arts (£90) is easy to use, has everything you need to conjure up some gorgeous graphics and is, therefore, the most popular paint and animation product released on any micro. The *Disney Animation Studio* (£100) concentrates on the more traditional methods of animatics and cartooning. If you're after more life-like images, take a look at some of the ray tracing titles out there such as *Sculpt 4D* (£250) and *Sculpt 4D Jr* (£80). Using some complicated calculating routines, the way rays of light bounce off objects can be mimicked, making them look far more realistic.

If the best sort of sprites and backdrops you can achieve still wouldn't look out of place in a kid's nursery, perhaps you should invest in a video digitiser of some sort? These handy gadgets can turn ordinary photographs or footage from video tape into a picture inside your Amiga. There is an almost bewildering array of such devices currently on sale. Digi-View Gold (£150) from NewTek is highly recommended because of excellent results and its complete software control over such important aspects as brightness, sharpness, resolution and palette. Digi-View Gold digitises in all the Amiga

The range of add-ons and peripherals for the Amiga is vast. Extra memory, fractal generators, graphics packages, light pens, light guns, extra drives, cabinets, synthesisers, video-packages and digitisers are just some of the equipment that's readily available.

**DO IT YOURSELF** **If you're still not satisfied with the range of software available on the Amiga, why not program your own? It's easier than you think, especially with something like Europress Software's award-winning *AMOS* (£50) program. *AMOS* has quickly established itself as the leading programming language for the Amiga before attempting the hassle of machine code. It lets people concentrate on the design of a game, utility or demo without worrying too much about how any fancy audio-video effects like moving animated sprites and screen scrolling are actually achieved. You'll require a workable understanding of BASIC programming before you start on your first epic, though. If you think you can handle the Amiga without any aid from clever programmers, look no further than Action Replay II (£60) from Datel Electronics. With this cartridge, you're able to examine memory and hardware registers, edit programs and look for pictures, sprites and fonts. The novice is able to disassemble programs, make notes on what you find, generally mess around with the way they work and thus discover the tricks of the trade.**

## IT'S SIMPLY THE BEST

graphics modes from 320x256 up to 768x592 and uses 2 to 4096 colours including halfbrite mode. Video Digitiser II (£90) by Datel Electronics can grab a frame of video in 1/50 second using 4, 8 or 16 grey levels. Rombo also produces an impressive widget, Vidi-Amiga (£180), which is widely regarded as the best video frame grabber for the price. Images can be grabbed from either colour video camera or VCR decks with this one.

### TOASTING

All these grabbing gizmos have given rise to a lucrative spin-off industry called Desktop Video. NewTek has taken the whole concept to totally new heights with the Video Toaster. If you've got £1300, two monitors and 5MB RAM to spare at the very least, this powerful Amiga accessory produces digital video effects normally found in £50,000 TV studios. These include advanced 3D animation software for things like flying logos and fog, genlock, frame grabber, character generator, 16.8 million colours, variable motion blur, fast photo-realistic rendering and jog shuttle control. This baby is good enough for broadcast use and took over four years to develop.

Such visual treats would be pretty limp without audio accompaniment, right? No problemo. Your Amiga excels at producing superb music and sound effects.

Have you ever wondered where all those funny or familiar audio FX comes from in a good game? These real sounds are referred to as sampled because they were originally taken from a normal sound source connected to your Amiga with a sampling device. It's the computer equivalent of a cassette recorder except you can perform all sort of tricks, like altering the tempo and adding reverb, on the sound once it has been sampled. Unfortunately, these wonderful samples requires large amounts of memory so they have to be kept short. Nearly everybody involved with the Amiga sells their own type of sampling hardware and software so you're absolutely spoilt for choice. FutureSound 500 (£90) is expensive, especially when considering the primitive software support, but produces crisp samples when used with a top notch editing program like *AudioMaster III* (£90). Microdeal offers the cheaper Master Sound (£40) complete with some nifty programs like a sequencer and musical keyboard emulator. Finally, Mini Sampler (£25) from Datel Electronics and Evesham Micros' Stereo Sound Sampler (£30) can hardly be beaten in terms of price.

### INEXPENSIVE

Real bargains can be found in Public Domain libraries, this is cheap software where the author forgoes the profits of publishing but may expect about £10 from you if the program is kept and used. This will usually provide you with extra documentation and upgrades in the future. Apart from the large selection of graphical demonstrations, primitive games and such like, there are many excellent PD utilities which enable you to combine sound samples into music compositions. The most notable of these, *Noise Tracker* and *MED*, cost around £2 each and put most so-called professional programs to shame. MED 3.0, in particular, is a brilliant music composition package from Finland which can load at least 64 sounds samples into the memory at once and display music in traditional notation. It also incorporates a sample editor and MIDI sequencer.

Standing for Musical Instrument Digital Interface, MIDI is a very practical solution to controlling synthesizers, drum machines and other musical instruments using your Amiga. By simply connecting a maximum of sixteen MIDI-compatible instruments to a MIDI interface (£30) attached to the back of the Amiga, you can run some special sequencing software to create any sort of music from the latest dance-tracks to more classical works. *Music X* (£100) is probably the most widely used sequencer on the Amiga. With *Music X* you're able to turn your machine into full music studio. For the beginner there is also a cut-down version, *Music X Jr* (£50). *Bars and Pipes* (£200) is easier to use than the *Music X* series and *Bars and Pipes Pro* (£250) includes such features as a mixing desk and the ability to display music notation. There are plenty of MIDI applications available from any good PD supplier, too. Gemini

**OUT OF THIS WORLD** **And now for something completely different... *Vista Pro* (£80) is a fractal generator able to recreate photorealistic landscapes with natural-looking mountains, coastlines and lakes for inclusion into your own pictures and programs. With it, you're able to transfer fractal-generated graphics into *DeluxePaint* or save landscapes as 3D images and import them into a ray tracing package like *Sculpt 4D*. This extraordinary program by Hypercube Engineering uses the computational formula invented by Professor Benoir Mandelbrot, a prominent mathematician at IBM in New York. Fractal graphics have so far been put to best use in military simulators and Pixar's spectacular planet genesis sequence for the Star Trek II: The Wrath of Khan movie. Warning! *Vista Pro* requires about 3MB RAM to run properly. Psygnosis make extensive use of fractals in the *Planetside* demo supplied 'free' with the CDTV.**

**There are a huge number of joysticks on the market which range in price from about £5 to more than £100! Try as many different types to find the one that suits you.**

Shareware is one of the many PD stockists with editors, utilities and sequencers for all the popular MIDI synths on the market. Don't worry if you're not another Mozart or Jean Michael Jarre, Island Digital is selling a range of ready-made 'Hands On' MIDI sequences (£20) for popular tracks like Michael Jackson's Bad and Hanky Panky by Madonna.

Alternatively, Mindscape is offering you a chance to play the piano without the hassle of formal lessons. Already enthusiastically featured on the enduring BBC 1 show Tomorrow's World, the Miracle (£300) is a complete system with full MIDI musical keyboard and easy to understand software which will teach you how to play the piano within a matter of hours. Mindscape intends to further the Miracle by releasing 'Play Along' programs over the coming months.

## ANTI-LEMMINGS

On a fun note, The Sickness Simulator from Strictly PD, features noisy samples of a cough, sneeze, burp, fart, groan and so on. Talking of PD, you cannot really afford to miss the excellent work of artists Tobias Richter and Eric Schwartz. The latter person is best known for his utterly fantastic *Anti-Lemmings Demo*. Even the boss of Psygnosis was blown away by the immense quality shown by this American teenager. Also from this talented and very humorous animator we have *A Night at the Movies, Juggette II, Space Shuttle* and *Stealth Fighter*. *Walker* is another famous Amiga demo where a giant AT-AT armoured vehicle from The Empire Strikes Back movie comes to life before your very eyes.

More everyday mundane tasks like writing a letter, teaching the kids how to recognise colours and shapes, or running a small business can benefit from an injection of Amiga magic.

With any good Word Processor or Desktop Publishing package you can bring your words and graphics together to express yourself like never before. With *Pagestream 2.1* (£200), for example, you can create anything from simple Christmas cards to sensational business brochures. Here you see a representation of the page you're working on, and you can move text and pictures around, enter headlines, and so forth. *Professional Page 2* (£250) is the number one choice for serious Amiga publishers. Meanwhile, a package like Genisoft's *Proclips* (£25) is a diverse collection of clip art to enliven the pages designed with your favourite DTP package. Arnor's *Protext 5.0* word processor is fine if you don't need the extra facilities provided by a Desktop Publishing program. It has an in-built spell checker with over 110,000 words and supports many languages including Albanian, Czech, Dutch, English, French, German, Hungarian, Italian, Latin, Norwegian, Polish, Rumanian, Spanish and Welsh. Don't forget you'll need to add a decent printer to see the results of your labours. Prices start at around £120 to over £1200 depending on the print quality and time it takes to reproduce a page of text and/or graphics. Like most things, you get what you pay for – but the Star LC-20 (£200) and Seikosha Notebook (£430) are just two of the many workhorses available to you. One thing to remember, more exotic printers can be a real pain to connect to your Amiga. Make sure the correct 'Printer Driver' software is available for the one you choose. Scanners are another useful peripheral for people into Desktop Publishing. These gadgets, like the Golden Image Scanner (£200), can transfer photographs and pages from books into your Amiga as a picture file. Here, you must watch out for a good dpi capability (Dots Per Inch) rating. Most scanners have a range of 100 to 400 dpi. The higher the number, the clearer the image that will be replicated.

**The Amiga range is continually expanding. Already we've got the A500, A500P, A100, A1500, A2000 and the A3000 and the Amiga CDTV. In the pipeline is a cut-down version of the A500, tentatively titled the A300, which should be available at the knock-down price of £200. There's also a rumour of a new A4000, and we'll bring you more news as soon as we've got it.**

## ALL MOD COMMS

Those with a hint of wanderlust might like to try a modem and to communicate with other Amiga users around the world via the telephone. Mind you, remember it's not one of the cheapest ways to make new friends. Emulation is another way to expand your horizons beyond the frontiers of the Amiga. The trouble is, it's very hard to simulate another computer system and use the software available on that machine. Very few, therefore, achieve any degree of success. Perhaps the only ones that come close are AtOnce (£200) for IBM PC emulation and A-Max (£170) which approximates the functions of an Apple Macintosh.

Wow! We hope this brief overview of the opportunities out there has prompted you to rethink the way you could use your Amiga in the months to come. There are just so many options freely available to you, that it can quickly get very confusing and frustrating. That's why CU AMIGA brings you the essential information you need to make the right purchasing decisions. Whether you're a Pixel Picasso or MIDI Maestro, there's always a range of new products under review and useful hints and tips to follow every month.

**If you've ever wondered what Workbench is all about, here's your chance to find out once and for all.**

# WORKBENCH WORKOUT

**Mat Broomfield elucidates.**

Though you may only use your Amiga for games, you're bound to encounter Workbench at one time or another, even if it's just to format a disk. However, there's a lot more on offer than that, especially now that the new 2.0 operating system has been released. As we take a detailed look, you'll soon discover that controlling your Amiga can actually be a simple and enjoyable past-time!

The first thing you'll need to do is load Workbench, so reset your computer and put the Workbench disk into the disk drive.

When it's loaded, you'll be presented with the main Workbench screen. This is blue if you're using a 1.3 Amiga or older, and grey if you're using a 2.0 machine such as the Amiga Plus (A500P).

## ICON SEE YOU

At the side of the screen are two small disks, known as icons. The top one is labelled 'Ram Disk', and indicates an area of memory where you can temporarily store data. Any information stored in the Ram Disk is lost when the computer is turned off for more than thirty seconds.

The other icon is either named Workbench 1.3, or Workbench 2.0, and it represents the disk that you loaded the Workbench from.

You'll also notice that there's a small red arrow on the screen, which is called a pointer, and is moved around using the mouse.

If you move the pointer so that it's on top of the Workbench icon, then press the left mouse button twice quite quickly (double-click), a box (known as a window) will open up containing lots more icons.

Although any picture can be used as an icon, it's what they do that matters, not what they look like.

There are five main types of icon and each represents a different sort of information.

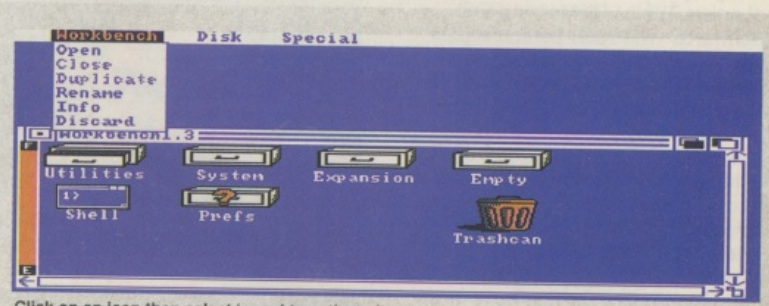
The first type is called a Disk Icon, and both the Workbench and Ram Disk icons fall into this category. Disk Icons are used to indicate logical devices such as floppy and hard disk drives and specially assigned areas of memory etc.

Whenever you double-click on a device icon, a window will open showing you the contents of that device.

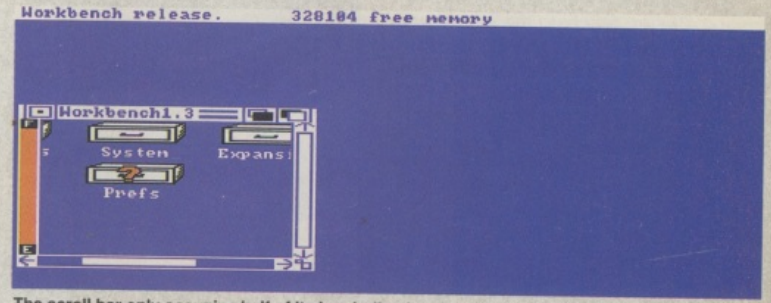
The second is called a Drawer or Directory Icon, and works in a similar way to the Disk icon. A directory is the computer equivalent of a folder in a filing cabinet. It doesn't actually tell you any information itself, it's just a receptacle which contains related files. Unlike a filing cabinet, the computer's also capable of storing folders within folders. A directory inside another directory is called a sub-directory, and is considered to be the child of the directory it's in.

By double-clicking on a Directory Icon, a window is again opened to show you its contents.

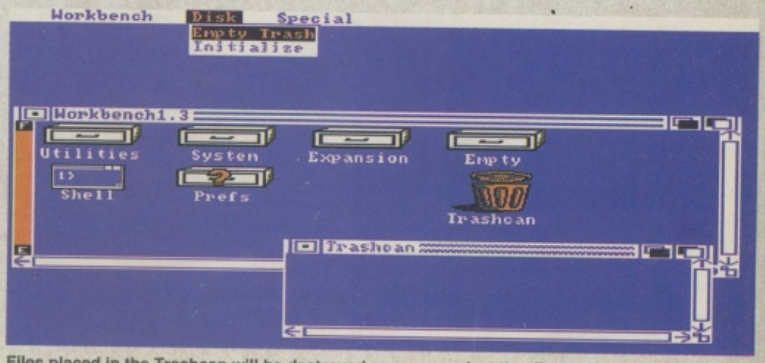
The next type is called a



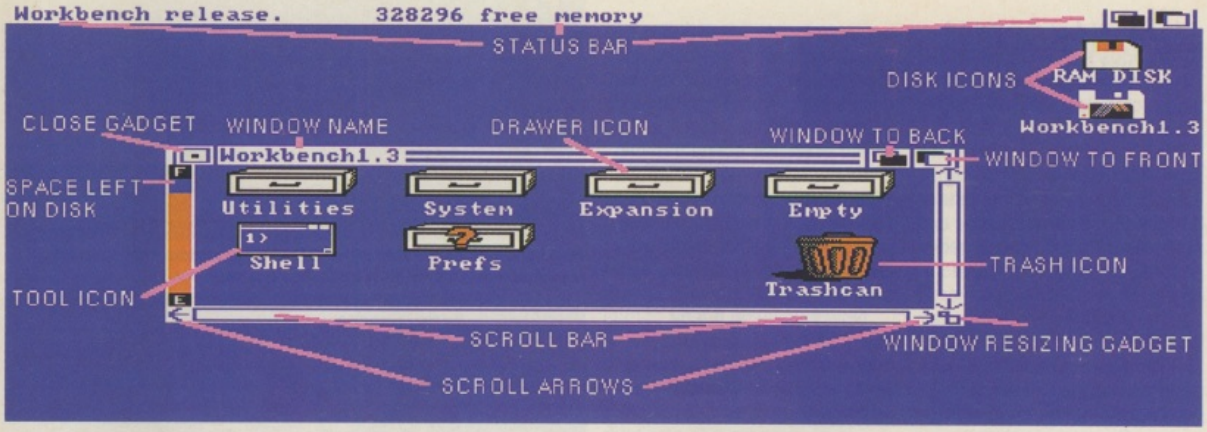

Click on an icon then select 'open' to activate it.




The scroll bar only occupies half of its box indicating that there's a lot more icons out of sight.




Files placed in the Trashcan will be destroyed once you select the 'Empty Trash' option.

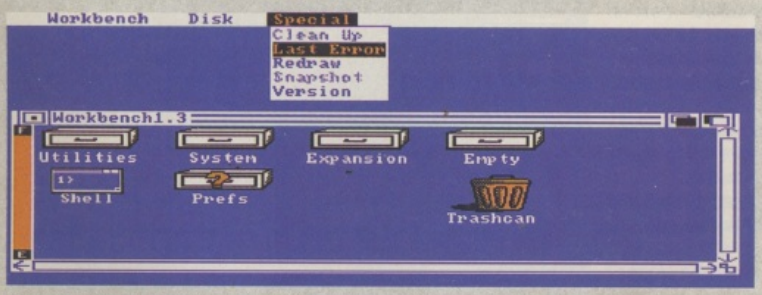



Tool Icon, and it represents any program which can be loaded by double-clicking on it. Some programs can only be loaded from CLI, and although they may still have an icon, trying to load them will generate the error message 'Unable to open tool xyz' (xyz is the name of the program).

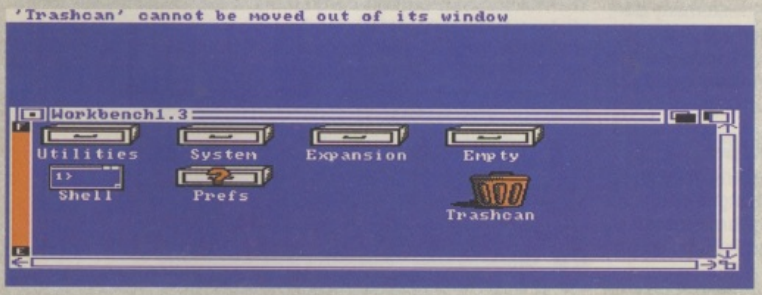
The Project Icon is used for any saves that you might make, from a word processor or art package for instance. When you double-click on them, Project Icons will automatically attempt to load the program that they were created with, and then load into that program. For example, if you clicked on the Project Icon for a text file that was created using *Wordworth*, it would automatically load the word processor before loading your file into it.

The final icon type is called Trash, and is used for the Trashcan on your Workbench disk. It represents a directory that can't be moved into another drawer (unlike the previous three icon types).

**Double clicking on an icon either loads a program or opens a window.**




**Select 'Last Error' and the most recent error message will be displayed in the Status Bar.**




**The error message confirms that Trashcan icon cannot be moved out of the window.**

## A WINDOW ON THE WORLD

If you take a moment to look at the window containing the icons, you'll see that it has a number of characteristics as well. For starters, the window has a thick border around it which displays various types of information.

At the top of the window there's a name: Workbench1.3 or Workbench2.0 in this case. This indicates the name of the icon that was double-clicked to open the window in the first place.

To the left of the name is a small square with a dot inside it. This is called a 'Close Gadget' because if you move the pointer over it and click with the left mouse-button, it closes the current window.

To the right of the window name are two further gadgets connected with positioning and sizing of the window. These gadgets look and function differently on machines with 1.3 or 2.0 operating systems.

On a 1.3 Amiga, the gadgets look like two differently coloured over-lapping rectangles. They both adjust the positioning of the window in relation to other windows which you may have opened. If you click the gadget with the dark rectangle to the front it pushes the current window behind any other windows that may be open. The gadget with the light rectangle to the front performs the opposite function.

On a 2.0 Amiga there's still one over-lapping rectangle gadget, but the other one has been replaced with a picture of a white square inside a blue one.

If you click on the over-lap-

ping rectangles, it either brings the window to the front, or pushes it to the back of the screen according to its current status. If you click on the other gadget, the window is automatically reduced or enlarged so that you can either see other things on the screen, or see more of the window you're working on.

Filling up the entire right-hand side of the window is a box capped at each end with arrows. Sometimes when a window is open, there are more icons than can be displayed at one time. Any icons which can't be displayed still has a position relative to the other icons, they're simply out of sight. Consider the windows of your own house – just because much of the terrain outside is out of view doesn't mean that it ceases to exist!

By clicking on either of the arrows, you can move the window's position relative to the various icons.

Between the two arrows there's a bar known as a 'Scroll Bar' which can be used as a quicker way of moving the window around. If you click on the scroll bar with the left mouse-button and keep the button held down, you can move the bar up and down within the box. The scroll bar itself represents the currently visible window, and the box represents the total amount of information to be displayed. For example, if the scroll bar half fills the box it means that the current window is equivalent to half of the total vertical area that the icons occupy.

Running horizontally along the bottom of the window, you'll notice another set of arrows complete with scroll bar. These work in exactly the same way laterally as the vertical ones.

In the bottom right of the window there's a small gadget for resizing it. If you click the pointer on it, keeping the button pressed, you can increase or decrease the size of the window.

The final element of a window can be found along its left-hand side, where you'll notice a gauge with an 'F' at its top and an 'E' at its base. This is only found on windows which were opened as a result of clicking on a device icon because it shows how full or empty the current device is. In most cases this only refers to a disk, but it can also be used to indicate spare memory.

2.0 users will notice that this is absent on their version of Workbench, but if you look to the right of the window name, you'll see a more detailed description of the current device.

Now that we've briefly explored the anatomy of a window and the purpose of icons, we'll move on to look at menus and how they work.

## MENU SELECTIONS

Press the right mouse button and hold it. You'll notice that the top of the screen changes to display a number of words. These words indicate that one or more options relating to that heading can be found there. Still holding the button down, move the pointer until it's on top of one of the words. The word should become highlighted (change colour), and a list of words should appear below it. These are the options that I mentioned. Without releasing the button, slide the pointer down the list of options. As the pointer moves over them, some may become highlighted themselves, or still further options may appear to their side. Many of the options will appear to be written in faded letters, and cannot be selected. This is called 'Ghosting' and the computer does it to indicate that those options are not currently available.

If you wish to select an option, simply move the pointer onto it so that it becomes highlighted, then release the right-mouse-button.

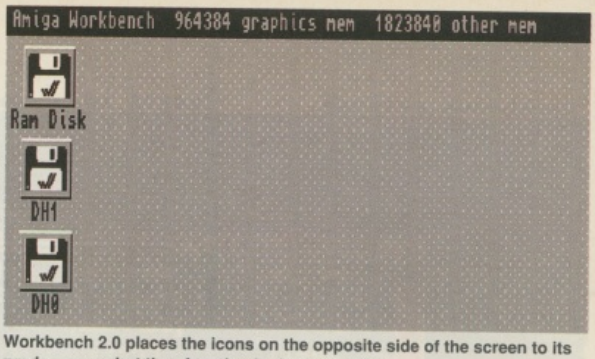
We're going to take a closer look at the different Workbench options now, but because there are so many differences between 2.0 and 1.3/2 Amigas, we'll examine each one in turn starting with the 1.3.

## 1.3 MENUS

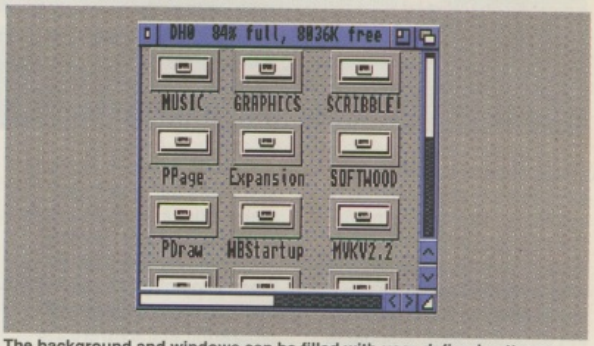
The 1.3 Workbench contains three menu headings: Workbench, Disk and Special.

The Workbench menu contains all of the options pertaining to individual files. Here's how they work:

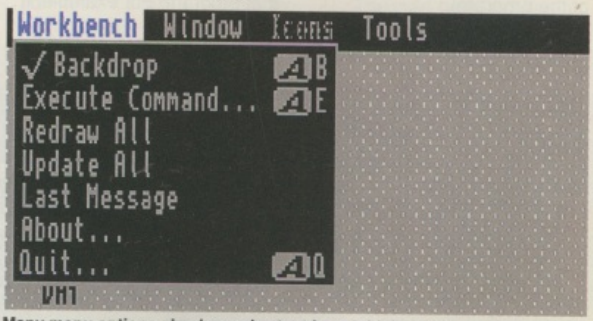
**Open:** If you you select an icon (by clicking on it once)



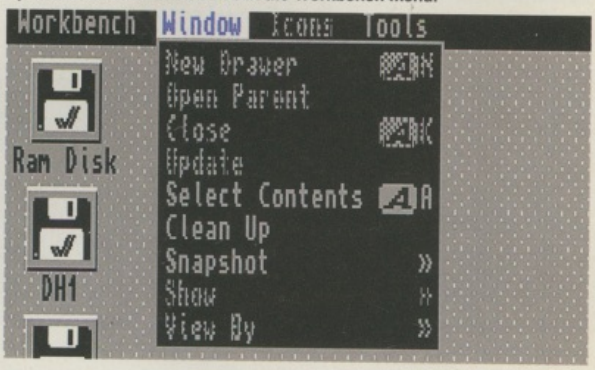

Workbench 2.0 places the icons on the opposite side of the screen to its predecessors but they function in the same way.



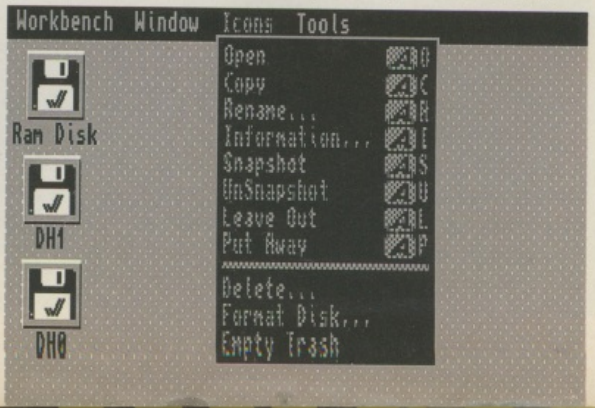

The background and windows can be filled with user-defined patterns under the new 2.0 operating system.

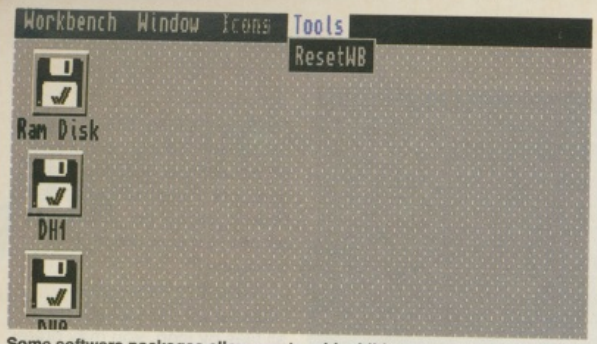



Many menu options also have shortcut keys which can be used to speed up selections. There are three in the Workbench menu.



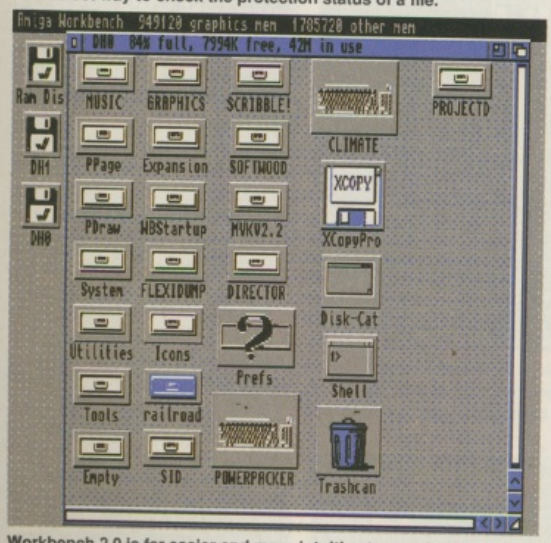

The 'Window' menu contains many options to improve the lay-out of your windows. Particularly useful is the Clean Up option which automatically arranges all icons into neat rows and columns. This is used in conjunction with the Snapshot option which saves your designer windows to disk.



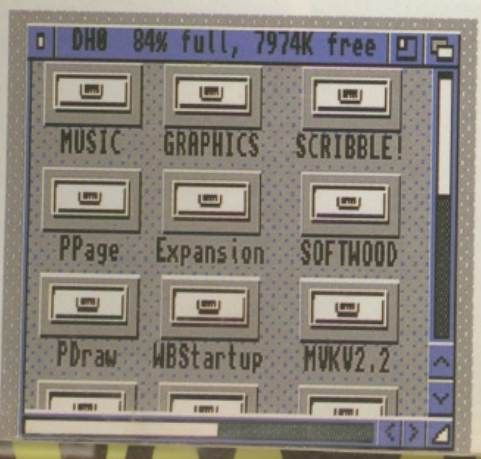



**Some software packages allow you to add additional options to the 'Tools' menu so that you don't need to double-click their icons to load them.**

**Click on an icon then select 'Information' to find out more about it. This is the easiest way to check the protection status of a file.**




**Workbench 2.0 is far easier and more intuitive to use than earlier versions. Many of the tools utilize completely re-written commands which are based on the ARP library.**




and select Open, it performs the same function as if you'd double-clicked the icon. ie, it either opens another window, or attempts to load a program.

**Close:** Once a window has been opened, it can be shut by selecting its icon then selecting close.

**Duplicate:** Allows you to make a copy of a program or drawer. Select the icon of the item to be duplicated and select Duplicate from the menu. A file will be created called 'Copy of... whatever'. Note, if you want to make a duplicate of a program on a disk, as opposed to one in memory, the disk must be write-enabled.

**Rename:** Select a file or drawer then choose rename to change its title.

**Info:** As described earlier, each icon has specific characteristics which can be shown by first selecting the icon then Info. Info also gives details about the protection status of a selected icon, and allows you to make programs non-deleteable for instance.

**Discard:** This option provides you with a quick way to permanently erase unwanted files etc. Select the item to be destroyed then choose the Discard option from the menu to kill it.

There are two options in the Disk menu: Empty Trash and Initiallize.

**Empty Trash:** If you wish to delete a lot of files, it may be quite time consuming to use the Discard option for each one. If you double-click on the Trashcan icon, a window will open which represents the inside of the 'can'. By clicking on an icon and holding the button down, you can drag unwanted files into this window, then when you're ready to delete them all select the Trashcan icon and choose Empty Trash to erase everything in one swoop.

**Initialize:** This is just another word for format. When you buy a blank disk it is 'raw' and unready for use on the Amiga. Before it can be used it must be converted into a special format which the Amiga can understand. By inserting the new disk, then selecting its icon and initiallizing it, the disk is transformed into something that the Amiga can read and write to.

The Special menu contains miscellaneous commands which, among other things, help you to keep the appearance of your Workbench screen tidy.

**Clean Up:** When a window is first opened, selecting Clean Up will cause all of its icons to be arranged neatly within it, thus saving you the chore of having to do the job by hand.

**Snapshot:** Once the icons in a window are arranged as you want them, selecting Snapshot with the window selected, tells the Amiga to save that layout. Whenever the window is opened in future, the icons will be presented exactly as you 'snapped' them.

**Last Error:** Occasionally the Amiga generates error messages telling you that something is wrong. If you didn't notice a message that was flashed up on the screen, selecting Last Error will re-display it.

**Redraw:** If a window has been corrupted for some reason, Redraw attempts to restore it to its former condition.

**Version:** Selecting this option displays the version numbers of both your Kickstart and Workbench.

## 2.0 MENUS

Workbench 2.0 features many enhancements over previous versions, and its four menus are the first to reflect these improvements.

**Backdrop:** Unlike its predecessors, Workbench 2.0 opens a window to display all icons, including device icons. By selecting Backdrop, the window can be switched off so that these icons appear on a standard backdrop.

**Execute Command:** This open up a small requester into which you can type CLI commands. This saves you time because previously you would have had to open a Shell or CLI window to do this.

**Redraw All:** Similar to the 1.3 Redraw command, Redraw All simply attempts to refresh any corrupted areas of the screen.

**Update All:** Sometimes information in one window is not displayed because another window has taken precedence. Selecting Update All causes all windows to be redrawn, and all information in them to be updated.

**Last Message:** Whereas the Last Error option of Workbench 1.3 only displayed

the previous Error Message, Last Message will re-display any message which you may have just missed.

**About:** This is exactly the same as the 1.3 Info command as it provides you with information about the Kickstart and Workbench Versions that are currently in use.

**Quit:** This much needed option allows the user to shut down the Workbench, freeing any memory that it may have been using. This option should be used with care, because unless a Shell window is left open, you can't return to Workbench once you've selected this.

Unsurprisingly, the Window menu contains options relating to windows and items within them.

**New Drawer:** This creates an empty directory in the current window.

**Open Parent:** When I talked earlier about directories and sub-directories, I mentioned that a sub-directory is considered to be the child of its host directory. Because you can close a main directory window whilst its child is still open, Open Parent will re-open it.

**Close:** This shuts down the active window and performs the same function as clicking on a window's Close gadget.

**Update:** When the contents of a window have been altered as a result of a CLI, Shell or other operation, the updated contents would not usually be displayed until that window is closed and re-opened. Update simply performs this function for you.

**Select Contents:** Occasionally you may wish to select all of the icons within a window. Although you can achieve this via a number of extended selection methods, the easiest way is simply to choose the Select Contents option.

**Clean Up:** Again, this option performs the same basic function as its 1.3 counterpart, but it's been made more flexible in the way that it works. Whereas under 1.3 Workbench the Clean Up option only worked as soon as a window had been opened, it can now be used any time to tidy up the icons within the active window.

**Show:** Because files don't necessarily have to have an icon. there may be a number of 'hidden' files within any directory. Select show and all false icons will be temporarily created for files which don't have one.

**View By:** Although the Workbench defaults to show all files by icon, you may prefer to see them displayed in words. The View By option has four sub-choices: Icon, Name, Date and Size. If you choose one of the latter three, all files will be displayed as text, but sorted according to the choice you made. For instance 'View By Date' will generate a chronological list of files, with the oldest at the top, and the most recently created at the bottom.

The third menu, called Icons, is roughly equivalent to the Workbench menu of 1.3 systems in that it contains options for manipulatin g individual icons and files.

**Open: Copy: Rename: Information:** These four options work in the same way as their 1.3 counterparts, so read the Workbench menu section for more details.

**Snapshot:** This saves the position of the selected icon or icons to disk so that whenever its window is opened, it's in the same position.

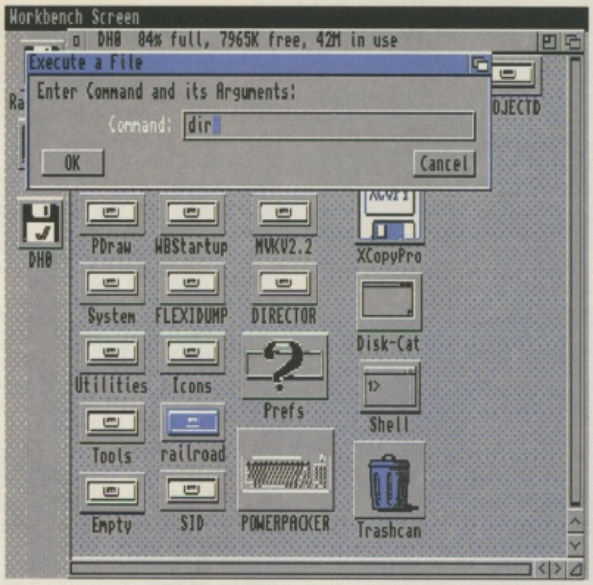
**Unsnapshot:** This allows you to over-ride the position of an icon. If the icon is not snapshotted again, the Workbench will position it where it wants when the window is opened in future.

**Leave Out:** Using the Leave Out option, an icon can be moved outside its parent window and placed in the Workbench window. Although its associated files will remain where they were, the icon will be permanently displayed on the Workbench window unless they are...

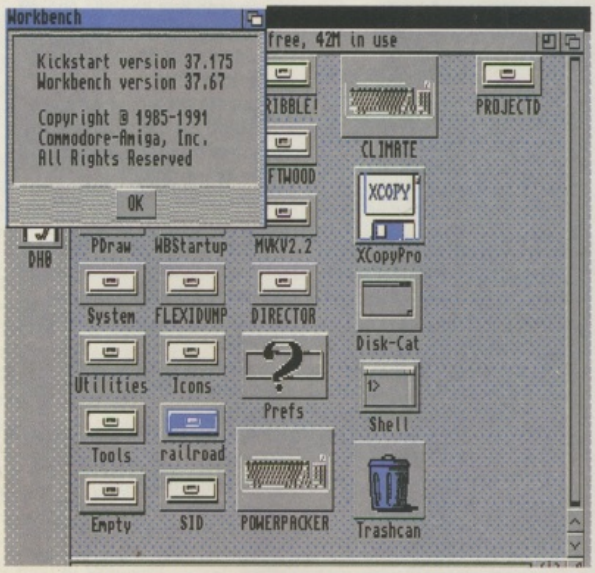
**Put-away:** This restores an icon to its original location after it's been moved using the Leave Out option.

**Delete:** Allows you to erase files from the disk, memory etc.

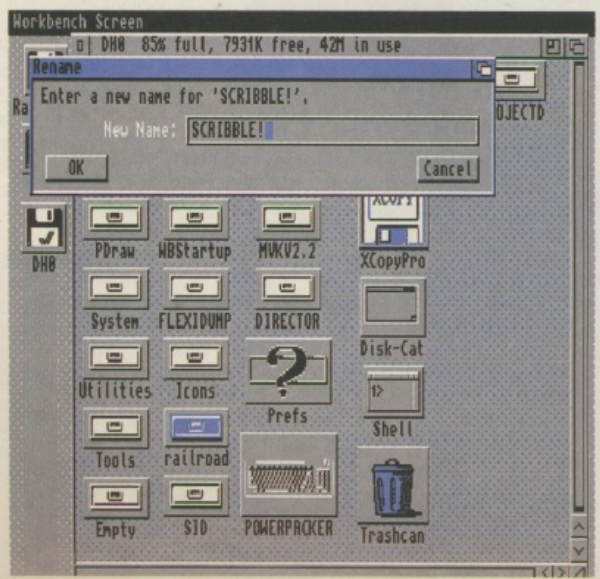
The Tools menu is unique in that it's the only one that you can add items to. For programs which support this feature, it means that they can be loaded via this menu option without having to open a window and double-click on their icon.




With the 'Execute Command' CLI commands can be used without having to open a Shell or CLI window.




'About' simply gives information on the versions of Workbench and Kickstart that are currently in use. Most programs which include this option also give details about the software's author and copyright holder.



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# STARTING OUT

**Controlling your Amiga can be wonderful – but before you can learn to program, you'll need to know how your computer starts up. . .**

Regular readers will recall that we showed you how to write your own startup-sequences back in the June '91 issue of CU. With so many new readers joining us, we thought that we ought to go right back to basics and explain how the Workbench startup-sequences work.

A startup-sequence is a small program present on many disks, which the Amiga looks at to receive further instructions on how to configure the computer and load the contents of the disk.

## HEART OF THE MATTER

The startup-sequence can be found in the S: directory of a disk and generally only contains the minimum number of commands required to run the programs on it. The Workbench startup-sequence is something of a showpiece because it contains many commands which are not needed for normal Workbench operations. This makes it an ideal place to learn about the subtleties of startup-sequences.

Let's begin by taking a look at the startup-sequence that comes with Workbench 1.3.2. The line numbers (1-18) are for reference only:

```
WORKBENCH 1.3.2 STARTUP-SEQUENCE
 1. C:SetPatch >NIL:
 2. Addbuffers df0: 10
 3. cd c:
 4. echo "Amiga Workbench
    Disk (UK). Release 1.3.2
    version 34.28"
 5. Sys:System/FastMemFirst
 6. BindDrivers
 7. SetClock load
 8. FF >NIL: -0
 9. resident CLI L:Shell-Seg
    SYSTEM pure add
10. resident c:execute pure
11. mount newcon:
12. failat 11
13. run execute s:Startup1l
14. wait >NIL: 5 mins
15. SYS:System/SetMap gb
16. path ram: c: sys:utilities
    sys:system s: sys:prefs add
17. LoadWB delay
18. endcli >NIL:
```

## WHAT IT ALL MEANS

Now I'll explain what everything means in a bit more detail;

### 1. C:SetPatch >NIL:

Because it's a disk-based machine, the Amiga requires a Disk Operating System (DOS) to allow users to control the way that information is transferred to and from the disks. Unfortunately the DOS of both 1.2 and 1.3 Amigas had a number of minor errors in it. Because the DOS is permanently stored in Read Only Memory chips (ROMS) users can't easily replace them for corrected versions.

A solution has been created in the form of a systems patch. This patch essentially attaches itself to the Amiga ROMS and substitutes the faulty programs with corrected versions. The Setpatch command is used to activate the systems patch so that everything works properly.

### 2. Addbuffers df0: 10

When you need to find out what's on a disk you call up a contents directory. This directory is loaded from the disk, and shows you all programs at a specified level. The Addbuffers command is used to create memory buffers so that when a directory is requested, that information can be stored temporarily. If the user then requests the same directory a little while later, the Amiga doesn't have to waste time reading that information from the disk because it's already stored in memory.

Each buffer is 512 bytes (half a kilobyte (K)) long. Although the Workbench startup-sequence sets up ten buffers, if you have the memory, 20-25 buffers will make your Amiga far more efficient.

You should note that each disk

MESSAGES
WELCOME to the NEW game - lots of FUN,FUN,FUN - PLAY it now
ACTION PACKED SHOOT 'EM UP EPIC OF A GAME TO FIRE YOU UP
PLAY
HELLO, MY NAME IS
how do you do
PLAYABLE DEMO- PLAYABLE DEMO
MOVING - BLASTING
platform ADVENTURE
R.P.G
int r

## HOW TO LOAD THE STARTUP-SEQUENCE

**Insert your Workbench disk and when it's loaded double-click first on the Workbench icon, then on the shell icon. In the Shell window type ED s/startup-sequence. This will load the file from disk into a utility called Ed, which allows you to view or change the file.**

**When you've finished looking at the file press escape then either type Q <return> to quit, or sa <return> to save then quit.**

**Warning! Don't save on the original Workbench disk. If you want to experiment with the startup-sequence, copy the disk first then use that.**

drive must have buffers assigned specifically for it, and the Workbench only sets up buffers for the internal drive (df0:). If you want to create buffers for a second drive, you'll have to use a command something like Addbuffers df1: 25.

### 3. cd:c

Although you can store a lot of information on a disk, that information doesn't all have to be stored in the same place. To make retrieval of information easier, files which are related can be grouped and placed into 'drawers' called directories.

Imagine that you're storing letters on a disk; you may have 200 letters covering business and personal correspondance. The business letters may also be sub-divided into private and job-related business.

If your letters are all stored in the same place, and you wanted to retrieve a specific one, you'd have to wade through dozens of unrelated titles before you eventually found your choice.

By seperating the letters so that business and personal letters are stored in seperate drawers, you may halve the amount of searching required to find your file. Directories can even be nested within each other (like those Russian dolls). When one directory is placed within another it's called a sub-directory.

If you want to load a particular file, you must tell the computer which directories it's in.

When the startup-sequence is run, the computer must load each command from disk before it knows what to do. Most of the commands are stored in a directory called C: so rather than specify this directory each time a command is called, the CD command (short for Current Directory), tells the computer to look in the C directory for all future commands.

### 4. echo "Amiga Workbench Disk (UK). Release 1.3.2 version 34.28"

The echo command simply tells the Amiga to duplicate everything within the quotation marks on the screen. In this case it simply prints the Workbench version number on the screen whilst the rest of the disk loads.

### 5. Sys:System/ FastMemFirst

The Amiga's memory is split into two main parts: fast Ram and chip Ram. Unfortunately, the custom chips (the blitter etc) cannot operate directly upon data stored in fast ram. However, when programs are running, they sometimes request memory of an unspecified type for certain operations. FastMemFirst ensures that on these occasions, fast Ram is allocated, thus saving valuable chip ram for custom chip operations.

### 6. BindDrivers

When additional items of hardware (hard drives, etc) are used, additional drivers are sometimes required so that the computer can communicate with them properly. These drivers (which are stored in the Expansions directory of a disk), need to be activated and 'linked' to the Amiga's system. This is what the BindDrivers command does.

### 7. SetClock load

The Amiga uses an internal system clock to keep track of the time and date. This clock resets itself every time the computer is turned off.

Some memory expansions are fitted with a battery-backed clock which does not reset when the computer's power is turned off.

Although this clock is seperate from the Amiga's system clock, the system clock can be made to synchronise itself with the battery-backed one using the Setclock command.

### 8. FF >NIL: -0

The Amiga's default speed for on-screen text printing is relatively slow. An Amiga programmer called Charlie Heath wrote a short program called Fast Fonts which speeded it up by about 20%, and as a result Commodore included it with all their 1.3 Amigas. This command simply activates the program.

### 9. resident CLI L:Shell-Seg SYSTEM pure add

The Command Line Interface (CLI) is an interpreter which allows users to issue typed commands to the Amiga. Shell is a more sophisticated version of CLI. This command loads the CLI into memory and transforms it into Shell by linking the upgraded Shell-seg.

### 10. resident c:execute pure

This command simply loads the execute command and makes it memory resident. This means that the command won't have to be loaded each time it's used.

### 11. mount newcon:

Similar to the way that the BindDrivers command was used to activate hardware drivers, mount Newcon: is used to activate the Shell related Newcon: device. Once activated, this merely provides the user with additional Shell editing facilities.

### 12. failat 11

When Amiga programs are running, an error number is generated if a problem is encountered. The more severe the error, the higher the number.

Unless specified, all errors will halt any further execution of the program. By raising the failure number from 10 to 11, minor errors encountered during the Startup1l script (executed in the next line) are ignored, and the program is allowed to continue.

### 13. run execute s:Startup1l

This simply runs a second set of commands stored as a file called Startup1l.

### 14. wait >NIL: 5 mins

Because the Amiga is capable of multi-tasking (doing two things at once), it would attempt to run Startup1l (in line 13) and the remainder of the main startup-sequence at once.

Whilst this is fine in theory, in practice it often results in two programs trying to read from the Workbrench disk simultaneously, thus causing the horrible grinding noise that many people are familiar with.

This line tells the Amiga to suspend execution of the remaining startup-sequence commands until Startup1l has been completed. Unfortunately it doesn't work very well, and the disk drive still makes a noise!

### 15. SYS:System/ SetMap gb

When you press a key, the computer doesn't think to itself 'Ah, he's just pressed the letter A', or 'she's just typed hello'. Each keypress generates a number which is 'mapped' against an internal list which tells the Amiga what you meant when you struck a particular key.

Being an American-made computer, the Amiga defaults to use an American translation list. This is fine in most cases, but certain symbols such as '#' and '£' are in different positions on a British keyboard.

The SetMap command allows the user to specify which language he wants the keyboard configured to.

### 16. path ram: c: sys:utilities sys:system s: sys:prefs add

If you recall what I said about directories and path names when I was describing the CD: c command in line 3, you may already have an idea what purpose this line serves. It simply tells the Amiga where to look when looking for files in particular directories – prefs for example.

### 17. LoadWB delay

LoadWB simply loads the Workbench so that you can use the icon-based loading system. The delay command tells the computer to wait for a few moments before doing so. This is yet another attempt to reduce disk grinding as the computer would otherwise be performing two disk operations at once (finishing loading the LoadWB command, and loading the Workbench itself).

### 18. endcli >NIL:

This command merely tells the CLI that it's no longer needed, and that it should close itself down and go away. Until this command is issued, the Workbench screen is not visible because it's behind the CLI window.

## IN CONCLUSION

You've probably noticed that a number of commands are suffixed by the characters >NIL:. Just so that you won't be left wondering what that means, many commands print messages which tells you more about them, or confirm that they are being successfully executed. As this text output is not really required, it is sent to a special location called NIL:.

Well, that's all there is to the main Workbench 1.3.2 startup-sequence. Workbench 2.0 features a number of differences which we'll discuss in detail on another occasion.

You might as well think of NIL: as a limbo where unwanted rubbish is dumped, because that's the purpose it serves in the startup-sequence.

For users who know how to use the CLI, you can prove this by typing List df0:. This will give you a normal listing of the files on the disk in the internal drive. Now type List df0: >NIL:

The computer still reads the disk, but nothing has been printed on the screen. The information has been sent to NIL: never to be seen again!

Hopefully you've found this feature informative. If you have any further questions, don't forget that you can always send them in to us at Q&A, CU Amiga, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU.

E TO the NEW game - lots of
PACKED SHOOT 'EM UP

**You've bought an Amiga and you're about to enter the bustling the world of computer**

# GAME, SET AN

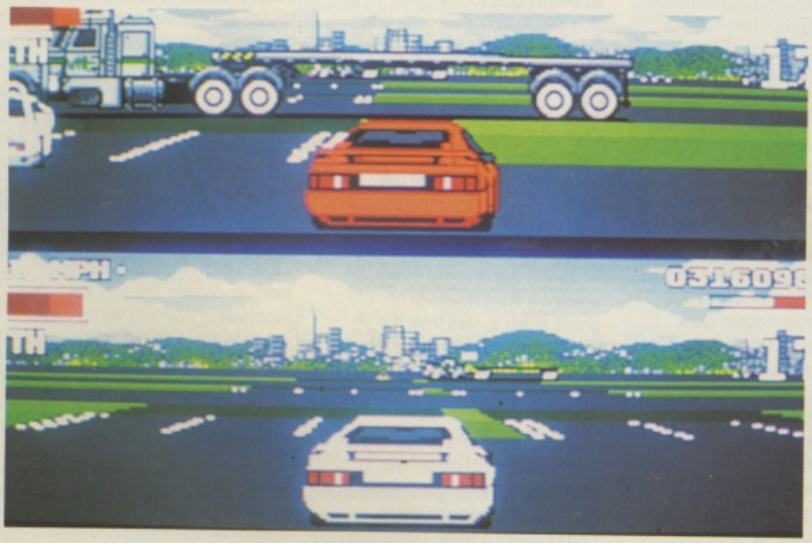
**games. But where do you start? CU guides you through the hundreds of game-styles and packages at your fingertips...**

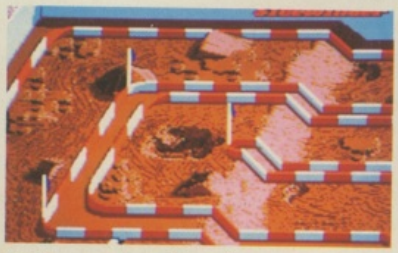
As far as computer games are concerned, the Amiga is probably the best 16-bit machine there is. Every aspect of gaming is catered for, from the deepest dungeons to the newest film and arcade licences, and – more importantly – they are all easily available. With the machine now out-selling its many rivals, more and more companies are producing games for it, and it's future is looking very rosy indeed – in fact, out of all the machines currently on the market, only the Amiga stands a chance of keeping up with the latest console boom. And the reason for this lies in the machine's flexibility and technical capabilities.

**Maxis' *Sim City* let you take cgarge of an entire city and plan its development over the years. This one's for council planners and game enthusiasts, alike.**

(take a look at *Chase HQ* and *Alien Storm*, for example), but a handful that are currently in development are looking very impressive indeed.

The same goes for film licences. Such is the versatility of the computer game format that licences as weird as *The Addams Family* to *Batman* can be turned into playable computer games. Nine times out of ten, these are made up of a series of sub-games comprising several different game-styles, but occasionally, someone will really push the boat out with a stunning advance in game ideas. You can guarantee that if a blockbuster film is heading your way, then the Amiga game won't be far behind. In the last year we've seen *Total Recall*, *Terminator II*, *Robin Hood*, *Hudson Hawk* and *Bill And Ted's Excellent Adventure* and, in the case of *Total*, *Hudson* and *Bill And Ted*, the games were arguably more enjoyable than their celluloid counterparts!



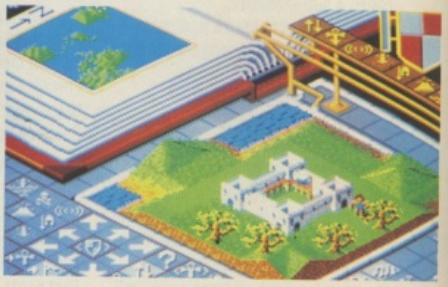


**Racing games have always been popular on the home computer and the Amiga sports two of the best, namely Gremlin's *Lotus 2* and Virgin's *Off-road Racer*.**

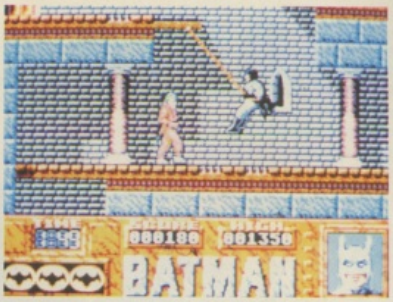
## Licenced To Thrill?

Although it isn't as technically advanced as Sega's fast-moving coin-ops or Taito's huge sprite extravaganzas, the Amiga can handle such conversions fairly well. Obviously, they aren't going to be perfect copies of the machine, but all the necessary gameplay will be there as will all the features that made you enjoy the machines so much. Classic Amiga conversions are two-a-penny, and the likes of *Rainbow Islands*, *Super Monaco GP*, and *Golden Axe* display the machine's ability to handle all manner of coin-op styles – for considerably less than the money you'd pump into their arcade parents, too. Granted, not all conversions can be deemed classic

***Below: Populous* represented the beginning of a whole new genre of game – the God Sim. You control the lives and destiny of a chosen land as you fought for supremacy against other God-like adversaries. Essential stuff!**



# ID MATCH

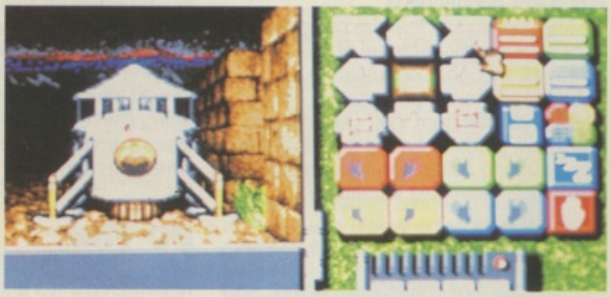


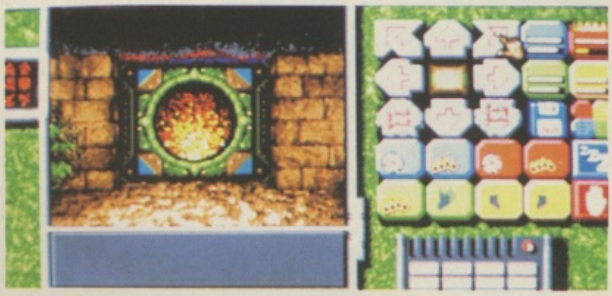

**Na-na-na-na-na-na-na-na, *Batman*. Ocean's famous license proved an instant hit as well as proving that licensed games could be original and fun.**

## Variety Is The Spice Of Life...

If you like your games a little more cerebral or maybe prefer the simplicity of a mega-death shoot 'em up, then once again you're well-catered for. All the major adventures can be found on the Amiga, with the classic Infocom series available for a mere seven quid a title, courtesy of Mastertronic! In addition, the Amiga was also responsible for the rapid growth of the arcade/adventure and the machine now sports more of this sub-genre than any other machine. In addition, as coders start to get to grips with the machine's capabilities, even more in-depth gameplay and better graphics are squeezed out of it. For instance, whereas FTL's *Dungeon Master* was long regarded as THE RPG by ST owners, along comes SSI and U.S. Gold with *Eye Of The Beholder*, an RPG-cum-arcade/adventure which blew FTL's game into a cocked hat. Or perhaps you'd like Disney-style cartoon-quality graphics with your RPG? Try Core's *Heimdall*, it'll blow you away.

Categorising the Amiga's thousands of games is a near impossible task, and the machine has more game-styles than you can shake a very large stick at. For instance, if you are out to buy a shoot 'em up, you are going to have to choose from a selection of hundreds. Vertically-scrolling, Sir? How about *SWIV* or *Xenon II*? Or maybe horizontally-scrolling, where you can pick from *Armalyte*, *R-Types I* and *II*, *Denaris*, *Silkworm*, and *Z-Out*? And that's without even mentioning arcade/adventure shoot 'em ups like the two *Turrican* games and *Alien Breed*, or 'point of view' blasters, such as *Operation Thunderbolt*, *Line Of Fire* and *Beast Busters*...

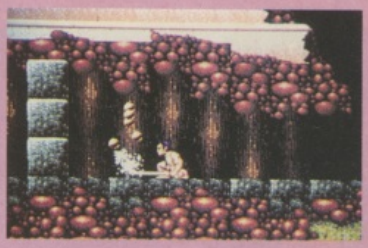




**RPG and Adventure games offer a welcome alternative to the shoot 'em up variety and, due to their complexity, can last for many hours.**

**Accolade's spooky Elvira game was true to the movie and also included more than its share of blood and gore.**

# GAME, SET AND MATCH



**Imageworks' *First Samurai* picked up an overall score of 91% in our review of the game last month. Designed by Mev Dinc, it's a blistering sword-wielding beat 'em up. If you want to take a look at other games in the genre, a definite must-buy is the classic *IK+* which, although more than three years old, is still one of the best available. Others games include *Final Fight*, *Panza Kick Boxing*, *Pit-fighter* and *Golden Axe*, but not all are to a high standard. The only way to make sure a game is up to scratch is to read the reviews in magazines like CU Amiga or find a good local computer shop which will let you try before you buy. At £26 a throw, games aren't particularly cheap so it pays to shop around for the best prices and read as many reviews as possible.**

## Cheap'N'Cheerful

The thing is, no matter how you like your games, the Amiga can more than cater for it – it even mixes in dozens of game-styles if you so wish. And although twenty-six odd quid may seem a little excessive for the latest release, then the major companies like U.S. Gold, Ocean and Domark have all produced spin-off budget labels where their past hits can be found for under a tenner. Within this thriving budget market there are dozens of real gems to be found. Take the aforementioned *Batman* licence, for instance: this pioneered decent licenced product with its top-notch mix of driving and platform sequences, and for a meagre £7.99 represents an absolute steal. In addition, if you're a fan of older coin-ops, such as *Bionic Commando*, *Outrun*, or *Bubble Bobble*, these too can be found at a budget price.

This isn't to say that the budget arena is predominantly made up of re-releases, though. Codemasters, veterans of the cut-price game, have made a bundle from their *Dizzy* series, which are platform-based arcade/adventures starring a little egg-like character, and Ocean have just tentatively released their first original budget game, with U.S. Gold about to do the same. In addition, if you have upgraded from an 8-bit machine, then there are also stories circulating that several companies are at present updating their back catalogue games for the Amiga, so you needn't miss the likes of *Beach Head*, *Combat School* or *Gryzor* after all. And, bearing in mind that the Amiga has almost identical specifications to these aging coin-ops, there's no reason why these conversions shouldn't be identical when they arrive.

## PD File

Furthermore, if your pocket can't stretch to budget games either, the Amiga has one of the busiest Public Domain scenes of any machine. As well as the may impressive demos and utilities the scene affords, the odd gem of a game can be found, too. Small games knocked up using Domark's *3D Construction Kit* or Palace's *Shoot 'em Up Construction Kit* are regularly released, but the PD scene is also frequented by talented new programmers

**In the last year the budget scene has really taken off. If you can't afford a really hot game now, chances are that in 12 months time it'll be available at half the price.**

**In a similar vein to *Operation Stealth*, *Cruise for a Corpse* was a great adventure with a fascinating Whodunnit theme set aboard a luxury cruise-liner. After the millionaire owner is murdered, it's up to you to solve the dastardly crime and save the day. But who could have committed such a dastardly crime? As you would expect, there are more than a few dodgy characters on board the ship and tracking down the killer is far from simple.**

who want to test their wares before they start professionally. Among the classics we've seen are an incomparable version of that golden oldie, *Missile Command*, several superior shoot 'em ups – of which the excellent *Tank* is the best – and a rather spiffy platform affair by the name of *Drip*. These are all available for roughly a pound and the price of a blank disk, and can represent excellent value for their minimal cost.

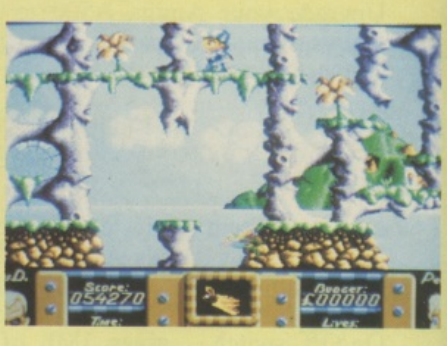
## Buy, Buy

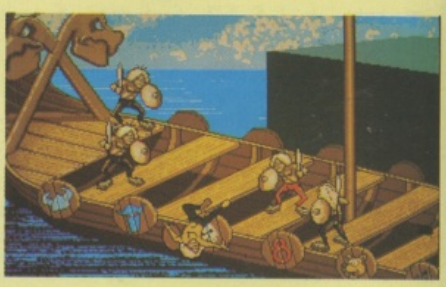
So where can these many games be found, then? Well, that's the beauty of it. Everywhere! All the major chains, including Boots, WH Smiths and Woolies stock Amiga games, and the small computer shops are still alive and kicking. In addition, companies like Virgin are confident enough in the future of the computer boom to introduce a chain of shops dedicated to computer games, and both London and Southampton now house these 'Games Centres'. In terms of choice, these larger shops are probably the best as they usually contain virtually every new release – and that's some thirty-odd games a month. However, you may find that some of the smaller run specialist clubs offer a better service than some of the larger shops as well as providing some hefty discounts on full-price games.

Another alternative is ordering from the mail order ads you may see in this and other magazines. These offer full-price games at drastically-reduced prices, and it is possible to save up to eight quid on a new release. However, there are a few fly-by-night companies out there, so always try to find out a little on the companies before sending off any cheques. There is the MOPS (Mail Order Protection Scheme), though, which is there to keep an eye on any rogue companies and will prevent mags from taking ads from unreputable companies who have a reputation for messing punters around. These Mail Order companies are also useful for finding more obscure games that you may have been after for ages, and can try to hunt down those elusive copies for you.

So there you have it, the exciting world of Amiga gaming. As with all those expensive hampers you see on TV, there's something for everyone, and unlike the Hamper, the Amiga will keep you going for a good few years yet...

**Platform games are a popular choice with the average punter. Classics include coin-op conversion, *Rodland*, the Bitmaps' *Magic Pockets* and the superlative *Rainbow Islands*, the blistering sequel to *Bubble Bobble*. More than any other type of game, platform games usually involve a collection of 'cute' characters which prompted the Sales Curve to sub-head their *Rodland*'s conversion with the immortal line: 'So cute, it'll make you puke'.**



**More than thirty full-price Amiga games are released each month. Their quality varies from the mundane to the brilliant. With more and more games being developed on the Amiga, coders are becoming more familiar with the machine's capabilities and the best games are definitely yet to come.**

**Heimdall combined traditional RPG gameplay with some stunning cartoon-quality graphics.**

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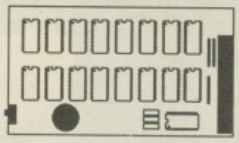
# Amiga A500 RAM CARDS



**V500:** ½Mbyte expansion.
Upgrade your Amiga A500 to 1Mb. Chip/fast ram compatible, gold plated connector, on/off switch.

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**V501:** ½Mbyte expansion + clock.
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**V2000:** 2Mbyte expansion + clock.
Upgrade your Amiga A500 to 2.5Mb. Expandable in ½Meg stages, compatible with Kickstart 1.2 & 1.3, On/Off switch, gives 1Mb of chip ram + 1.5 Mb fast ram if required. Comes complete with Gary connector & full installation instructions.

V2000 bare board **£37.95**
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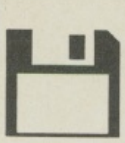
**V4000:** 4Mbyte expansion + clock.
Upgrade your Amiga A500 to 4.5 Mb. Same as V2000 but gives an additional 4Mb of fast ram or 3.5Mb fast + 1Mb chip ram

V4000 bare board **£63.00**
V4000 + 4Mbyte **ONLY £198.00**



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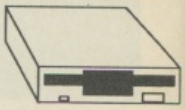

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**Ram chips** 256Kx4, V1000, V2000, V4000 & A590 compatible. ONLY **£17.59** for ½Mbyte

# Upgrade Your A500 *Plus*

**Realise the full potential of your Amiga A500 *Plus* with one of Virgo's range of memory expansions.**

**V500+** The easy way to upgrade your 500 *Plus* to 1.5Mb. Fully compatible trapdoor expansion, will not invalidate your guarantee. Built to the highest standards in the UK complete with top quality gold plated connector, low power D-rams and on/off switch.

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**V1000** The memory expansion that grows with your requirements. The V1000 is available in three configurations: bare board, ½Mb & 1Mb. This expansion will take your A500 *Plus* to its full 2Mb chip ram capability in affordable stages. A fully compatible trapdoor expansion which will not invalidate your guarantee. Built in the UK complete with gold plated connector & socketed D-rams.

| V1000 | bare board | ½Mb | 1.0Mb |
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Maintain software compatibility on your A500 *Plus* with standard 1.3 Kickstart A500 machines using the Virgo Kickstart swapper. Switching between 1.3 & 2.04 ROMs giving you all the benefits of the A500 *Plus* without the annoying inconvenience of software incompatibility. This board can also be used to upgrade standard A500s to 2.04.

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# GLOSSARY

**add-on**
Any external device connected to your Amiga such as a printer, joystick or modem. See also peripheral.

**AmigaDOS**
The Amiga Disk Operating System.

**animation**
Sequence of pictures that, when shown in rapid succession, creates the illusion of a moving image. Each picture is referred to as a frame of animation.

**anti-aliasing**
Process of smoothing out the rugged edges of computer-generated graphics by softening the colour and luminance intensities of the pixels.

**ASCII**
American Standard Code for Information Interchange designed to achieve compatibility between data devices.

**baud rate**
Rate at which information is transferred through a serial port.

**bit**
Smallest unit of information that a computer can hold (0 or 1).

**bitmap**
Series of bits that represent a graphic image.

**blitter**
Part of the internal Amiga hardware used to copy and transfer data at extremely fast speeds.

**byte**
Unit of memory consisting of eight bits.

**CD-ROM**
Device that stores a massive amount of data (in excess of 500 megabytes) on special compact discs.

**CDTV**
Commodore Dynamic Total Vision. Amiga with built-in CD-ROM drive redesigned to look like an ordinary CD-player. See also multimedia.

**CLI**
Command Line Interface used to communicate directly with AmigaDOS without employing icons.

**copper**
Display-synchronised coprocessor that resides on one of the Amiga custom chips and directs the graphics display.

**CPU**
Central Processing Unit. Commodore uses the Motorola 68000-family of microprocessors in the Amiga.

**data**
Any form of information stored and processed by a computer such as text, images and sound.

**disk**
Medium for storing and retrieving data.

**DMA**
Direct Memory Access.

**exec**
Low-level primitives that support AmigaDOS.

**file**
Any collection of data stored on a disk.

**floppy disk**
Disk made of plastic that stores computer data on a magnetic surface.

**font**
Collection of letters, numbers and other typographical symbols.

**frame grabbing**
Technique to capture video images and convert them into computer graphics. Also called a video digitiser.

**genlock**
Add-on device used to combine the graphical output of your Amiga with any video source such as a VCR or video camera.

**graphics tablet**
Peripheral device for drawing images.

**halfbrite**
Amiga display mode that can handle 64 colours on-screen at the same time.

**HAM**
Hold And Modify. Graphics mode on the Amiga that can display 4096 colours on-screen.

**hard disk drive**
Stores very large amounts of data and operates a lot faster than a floppy disk drive.

**icon**
An image representing an object, concept, message or possible action.

**in-betweening**
Transformation between two key frames in an animation sequence.

**interface**
The point of communication between you and a computer.

**interlace**
Display mode which doubles number of vertical scan lines.

**kilobyte**
Unit of memory consisting of 1024 bytes. Usually abbreviated to K.

**light pen**
Add-on device shaped like a pen that you point at the screen to control functions during special application programs.

**light source**
Point from which a scene is illuminated.

**megabyte**
Unit of memory equal to 1024 kilobytes (K) or 1,048,576 bytes. Usually abbreviated to MB.

**memory**
Hardware component of a computer that can store data for later retrieval.

**modelling**
Process of creating a three-dimensional computer graphic object.

**modem**
Device that links your Amiga to other computers via telephone lines. Short for modulator/demodulator.

**mouse**
Small device that controls a pointer on the screen.

**MS-DOS**
Microsoft Disk Operating System used by IBM PC-compatible computers.

**multimedia**
Combination of text, images and sound in a single program.

**multitasking**
Allows multiple programs to be 'simultaneously' run.

**NTSC**
National Television Systems Committee. The 525-line composite video system used in the USA.

**PAL**
Phase Alternating Line. The 625-line composite video system used in the UK.

**PD**
Programs put in the Public Domain by their authors. Free software! See also shareware.

**peripheral**
Piece of hardware – such as a monitor, disk drive, printer or modem – connected to, and controlled by, your Amiga. See also add-on.

**pixel**
Short for picture element. A location in memory that corresponds to a point on the screen.

**pointer**
An arrow or other symbol on the screen under your control via mouse, keyboard or joystick. You use the pointer to choose commands or draw in graphics programs.

**port**
Socket on a computer that you can use to connect peripherals.

**program**
Set of instructions for the computer telling it what to do. Computer programs are collectively referred to as software.

**RAM**
Random Access Memory.

**ray-traced**
Technique which mimics the way rays of light bounce off graphical objects.

**rendering**
Process where each graphical object in a scene is shaded and lit making it look more realistic.

**resolution**
Number of pixels that can be displayed.

**ROM**
Read Only Memory.

**RGB monitor**
A monitor that interprets video signals for Red, Green and Blue to create any colour.

**scrolling**
Moving the display in a vertical or horizontal direction.

**SCSI**
Small Computer System Interface.

**shareware**
Similar to PD software, except the authors expect some sort of payment if you decide to use their programs.

**sprite**
Graphic object which is easily moved and manipulated. Perfect for game applications.

**TV modulator**
Device used to connect a television set to your Amiga.

**user group**
Club whose members exchange tips and information.

**virus**
Malevolent software that damages files stored on floppy disk or hard disk. Virus-busting programs are available from dealers and user groups.

**workbench**
Allows you to manipulate some of the facilities of the Amiga.

PHOENIX

RAM expansions made for the older A500 will not work with the new A500 Plus if they are populated to more than 512k. Phoenix have developed a range of RAM expansion units specifically for the new A500 Plus.

## WHY DO YOU NEED PHOENIX RAM EXPANSIONS?

The A500 Plus can only be expanded to 2 Mb of chip RAM using the trap door expansion port.

◆

Chip Ram is required to unleash the full graphics capabilities of the Amiga 500 Plus

◆

The A500 Plus can only use specific RAM expansion modules that will do this such as Phoenix.

◆

Phoenix Ram expansion modules are built to the highest possible standards in the U.K.

◆

Each unit is individually inspected and tested before release.

◆

Phoenix 1 Mb RAM modules come in either 512K, 1Mb or unpopulated configurations.

◆

All Phoenix product is backed by a full 2 year replacement guarantee.

TWO YEARS GUARANTEE 2

# EXPAND

## your AMIGA A500 *Plus*

with the

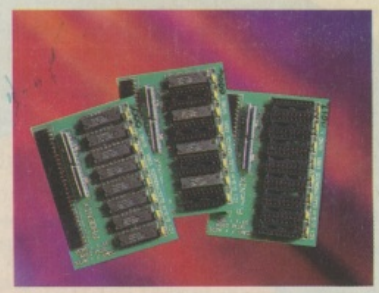
## A500 *Plus* 1Mb RAM modules

The Phoenix 1mb RAM expansion is available either unpopulated, populated to 512K or fully populated to 1Mb. All boards use industry standard 256 by 4 DRAMs. The Phoenix Ram will fit simply into the trap door expansion port without any modification and **Will Not** invalidate your warranty.

**Unpopulated only £16.99**

**512K populated only £39.99**

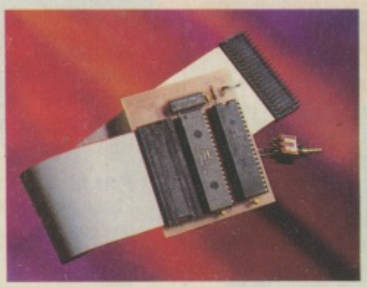
**1Mb fully populated only £49.99**



## Kickstart ROM1.3/2.04 sharer

Because some older Games and Business software will not run on the new Kickstart 2.04 ROM Phoenix have designed a sharer for both ROM chip sets.

Switchable between 1.3 and 2.04 you can get all the benefits of the latest A500 *Plus* without the drawback of losing some of your favourite software.



**Kickstart ROM1.3/2.04 sharer only £24.99**

◆

**Kickstart ROM 1.3 chip only £29.99**

### Order Hotline

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